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(71) Applicant(s)  
John Gill  
First Impressions, Lewes Road, FOREST ROW,  
E Sussex, RH18 5AA, United Kingdom

(72) Inventor(s)  
John Gill

(74) Agent and/or Address for Service  
Marks & Clerk  
57-60 Lincoln's Inn Fields, LONDON, WC2A 3LS,  
United Kingdom

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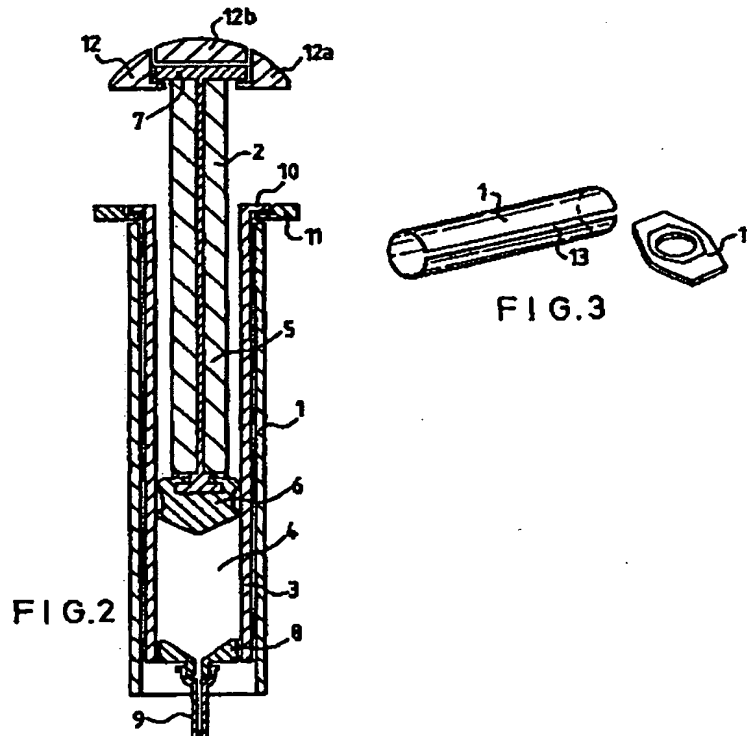
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F1R R15B2

(56) Documents Cited  
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WO 90/07945 A1 US 5106378 A US 5057088 A  
US 4938924 A US 4997422 A US 4946447 A  
US 4681567 A

(58) Field of Search  
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## (54) Syringe sleeve

(57) A sleeve 1 of metal or plastics is engaged with the body of a syringe to provide a surface which can be decorated or which is of a shape or texture to provide a good grip. The sleeve may act as a thermal insulator if the syringe is used to transfer volatile products such as paint, lighter fuel or scent, or a thin foam sheet may be contained between the sleeve and syringe body to serve as an insulator. The sleeve may grip the syringe by means of clips or adhesive or may comprise resiliently deformable material that grips by friction. A flange part 11 may be provided for engagement between the sleeve and a flange 10 of the syringe and a plunger end part 12 comprising engageable pieces 12a and 12b may be fitted to the end of the plunger.



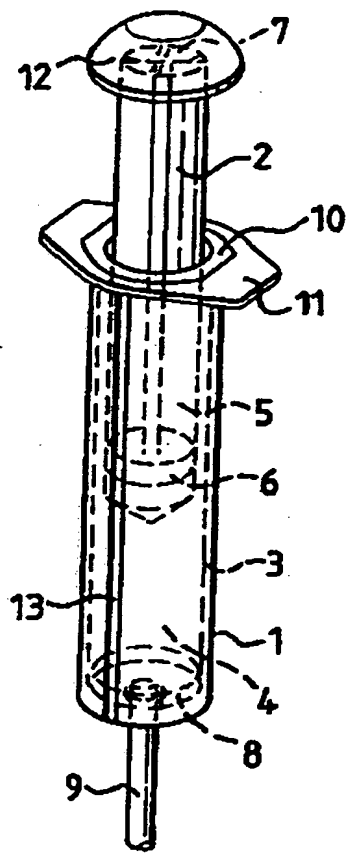


FIG. 1

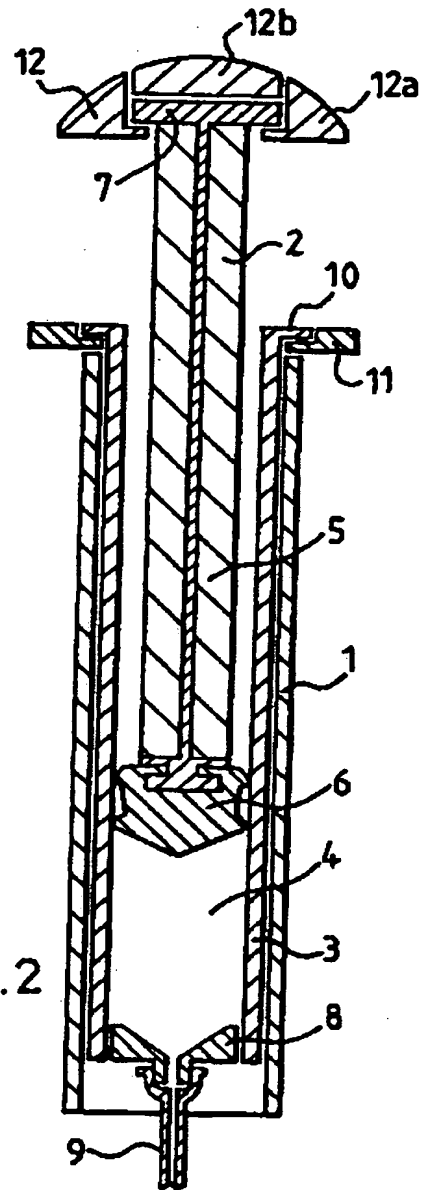


FIG. 2

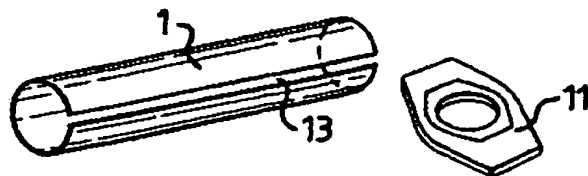


FIG. 3

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## SYRINGE COVER

The present application relates to a syringe cover. Syringes are widely used for measuring and transferring quantities of liquids. They are used in hospitals and laboratories but there are many applications for syringes in domestic and workshop practice. Simple and reliable mass produced syringes are available for general use. Their appearance clearly reflects their design for medical and laboratory use. The appearance of syringes is now strongly associated with drug abuse and hospitals and is unpleasant to most people.

The inventor has realised that a commonly available mass produced syringe can be made more flexible, usable and aesthetically acceptable by mounting the syringe in a sleeve.

Accordingly, the present invention provides a sleeve for securing to a syringe body.

The sleeve can fulfil a number of functions.

The sleeve can be decorative or can serve as a mounting for decoration to improve the appearance of the syringe.

It can protect the syringe body and any printing thereon from damage.

The surface of the sleeve or a member mounted on the sleeve can be of such shape or texture to ensure a good grip, making the syringe easier to use.

When used to transfer solvent based products, (based for example on hydrochlorocarbon solvents, ether or ethanol) such as paint, lighter fuel, scent etc there is a problem in that the liquids are very volatile. The warmth of the fingers on the syringe can cause some of the liquid to vaporise and eject liquid from the spout of the syringe. The sleeve can act as a thermal insulator to counteract this, or it may be of a material (such as a metal) and/or of sufficient mass to act as a heat sink, having a high heat capacity.

Conversely, a syringe may be required to transfer relatively hot fluid. With a commonly available syringe, the heat from the fluid may make it difficult or unpleasant to handle the syringe. Again, the sleeve can act as a thermal insulator making the syringe easier to use.

A sheet of insulating material, such as a thin foam sheet, may be contained between the sleeve and the syringe body.

The sleeve may be of any suitable shape or configuration. Syringes are often produced in a range of standard sizes and the sleeve size may be constructed to fit any selected size or sizes of syringe. The sleeve may be shorter than the syringe body, but is preferably of generally the same length as the syringe body or slightly longer. If it is slightly longer, the sleeve may project beyond the syringe body to give protection to the point at which the spout or needle is fixed to the body of the syringe.

The sleeve may grip the syringe by any suitable means, such as clips or adhesive. Preferably, the sleeve is comprised of a resiliently deformable material that grips the body of the syringe so that the sleeve remains in place by friction.

The sleeve may grip the syringe along substantially the whole length of the syringe or only at selected points, may be at only two positions. For example, the sleeve may be formed in any desired functional or decorative shape having parts for gripping and/or fixing to the syringe body.

The syringe cover may comprise means for receiving a syringe, spout or tube. For example, means may be provided for safely storing and protecting the needle or

tube when not in use.

Preferably, the sleeve is removable from the body of the syringe. This allows the sleeve and syringe to be separated and cleaned separately from one another.

This is particularly easy in the case where the sleeve grips the syringe body by friction.

Syringes commonly have a flange at the top of the body to cooperate with the fingers when in use.

The sleeve may abut such a flange directly or through a further flange, so that the sleeve is stably located against axial movement with respect to the syringe body when in use.

The sleeve may have a flange preferably of a size or of a convenient shape, texture or design to cover the flange of the syringe or to allow a firmer grip than is otherwise possible with the flange of the syringe.

There may additionally be a part for protecting the plunger of the syringe. It is not usually necessary to protect the whole length of the plunger, as it normally rests safe inside the syringe body. However, a part (for example of pewter) may be provided for engaging the end of the plunger to provide protection for it and to

provide a decorative or conveniently shaped or sized grip or textured surface for grip.

The design of the plunger end part depends upon the design of the plunger end itself. Preferably, the plunger end part is releasably attachable to the plunger end, so that the plunger can be washed or exchanged. The plunger end part may comprise one or more pieces with snap fit projections for fitting over the plunger end. It may comprise two parts, fixable together (for example by snap fit means or screw threads) which between them define a space corresponding to the plunger end in shape and size, wherein the plunger end can be gripped between the two parts.

For example, there may be a first part which has a bore so that it can be slid over the plunger and along the plunger shaft towards the plunger end and a second part, for abutting the end face of the plunger end and engageable with the first part.

The cover may include any suitable components for covering or engagement with the shape of any type of standard syringe.

In a preferred embodiment, the sleeve comprises a preferably substantially rectangular sheet of material wrapped around the body of the syringe and having a

substantially cylindrical configuration. It is then particularly easy to provide for a frictional grip on the syringe body.

Identification surfaces may be provided for carrying identification of the liquid contained in the syringe or for which the syringe is to be used.

The sleeve may be perforated or have openings in it, for example to allow the contents of the syringe to be viewed. The embodiment of the sleeve as a wrapped sheet can be arranged so that the end edges of the sheet are separated by a small gap (e.g. around 1mm wide) through which the level of liquid in the syringe can be seen.

The sleeve is preferably rigid. It is preferred that the sleeve should not deform substantially or permanently when under the load normally applied by the fingers to operate a syringe. The syringe may be formed of any suitable material, such as metal (e.g. brass, steel, silver, aluminium or gold), plastic, preferably ABS (acrylonitrile butadiene styrene) moulded plastic, or paper or card. A paper or card tube must be rigid as defined above and not a single ply adhesive or other form of wrapper or label. A paper or card tube is particularly suitable for decoration by printing. A paper or card tube which is sufficiently rigid may have a thin sheet of printed material, for example an adhesive



backed material, applied to it.

The sleeve should be of sufficient thickness to provide the rigidity noted above.

Typically, the sleeve may be in the region 15-5cm in length, and may be of a generally circular cross section of diameter 3-0.5 cm. These measurements do not include the plunger and any spout or needle. The sleeve may be of thickness 0.1 - 2mm, preferably around 1 mm.

To prevent the syringe from rolling, the sleeve may have a non-circular or roughened surface.

The invention will be further described by way of example only with reference to the accompanying drawings, in which:

#### Brief description of drawings

Figure 1 shows an isometric view of a sleeve according to the present invention engaged with a syringe;

Figure 2 shows a vertical cross section through a sleeve according to the present invention wrapped around a syringe; and

Figure 3 shows an isometric view of a sleeve

according to the present invention, disengaged from the syringe.

Details description of the drawings

The sleeve, designated 1 in figures 1 and 2, is shown engaged with a syringe 2 (shown cross-hatched in figure 2 for clarity) of a known design. The syringe itself does not form part of the present invention.

The syringe 2 comprises a body 3 defining a space 4 for containing liquid. There is a plunger 5 having a sealing end 6 and an end 7 for pushing. A spout 8 is provided which may contact the liquid directly or may be engaged as shown with a needle or tube 9 of increased length. The tube 9 is shown of indefinite length in figures 1 and 2.

As can be seen in figures 1 and 2, the sleeve is of a length slightly greater than the length of the body of the syringe so that it protects the connection between the spout and the extender 9. The sleeve engages the syringe body frictionally. There is no other means of connection as the grip provided can be sufficient and allows disconnection of the sleeve and body 3 for separate washing.

The syringe is provided with a small flange 10 for

cooperation with the fingers when in use. It is found that this is frequently not big enough and a secondary flange 11 is provided as part of the cover 1. As shown in figure 2, the secondary flange 11 has a recess for containing the flange 10. The secondary flange 11 is of greater dimensions than the flange 10 and is fixed in position by being held firmly against the flange by the cover 1.

As shown in figure 3, when in a disassembled state, the secondary flange 11 need not be physically connected to the cover 1.

A plunger end part 12 is snap fitted onto the end 7 of the plunger. The plunger end part 12 can provide a large, specially shaped or textured surface for allowing a good grip of the plunger end 7.

The plunger end part comprises a first part 12a which can be slid over the plunger 6 up the shaft 5 to the plunger end 7 and a second part 12b releasably engageable with the first part 12a. The plunger end 7 is gripped between parts 12a and 12b.

Decorative features (not shown) can be provided on all surfaces of the cover 1, secondary flange 11 and plunger end part 12.

Similarly, these parts may be textured to improve grip.

The sleeve 1 is comprised of a sheet of metal rolled into suitable configuration for engaging the outside of the syringe body. The respective ends of the sheet are separated by a small gap 13 through which the contents of the syringe can be viewed if the syringe is of transparent material.

The present invention has been described above by way of example only and modifications can be made within the spirit of the invention. The invention also consists in any individual features described or implicit herein or shown or implicit in the drawings or any combination of such features or any generalisation of such features or combination.

**CLAIMS:**

1. A sleeve for engagement with a syringe body.
2. The sleeve according to claim 1, being comprised of metal or plastic.
3. The sleeve according to claim 1 or 2, comprising a substantially rectangular sheet formed into a generally cylindrical configuration.
4. The sleeve according to claim 3, wherein respective end edges of the sheet are separated by a small gap.
5. The sleeve according to any preceding claim, further comprising a flange part.
6. The sleeve according to claim 5, wherein the flange part is for engagement between the sleeve and a flange of a syringe.
7. The sleeve according to any preceding claim, being a thermal insulator or having a high heat capacity.
8. A sleeve according to any preceding claim, wherein the sleeve is detachable from the syringe body.

9. A sleeve according to any preceding claim, wherein the sleeve is of a length slightly greater than the length of the syringe body.

10. An assemblage comprising a sleeve according to any preceding claim, and a plunger end part for engagement with the plunger of a syringe.

11. A syringe engaged with a sleeve according to any preceding claim.

12. A sleeve for engagement with a syringe body, substantially as herein described with reference to the accompanying drawings.

**Amendments to the claims have been filed as follows**

**CLAIMS:**

1. A non-medical syringe having a body defining a space for containing liquid, and a plunger, the syringe being mounted in a substantially cylindrical sleeve which covers the body and is fixed when the syringe is in use
2. A syringe according to claim 1, wherein the sleeve is comprised of metal or plastic.
3. A syringe according to claim 1 or 2, wherein the sleeve comprises a substantially rectangular sheet formed into a generally cylindrical configuration.
4. A syringe according to claim 3, wherein respective end edges of the sheet are separated by a small gap.
5. A syringe according to any preceding claim, wherein the sleeve further comprising a flange part.
6. A syringe according to claim 5, comprising a flange and wherein the flange part of the sleeve engages the flange of the syringe.
7. A syringe according to any preceding claim, wherein

the sleeve is a thermal insulator or has a high heat capacity.

8. A syringe according to any preceding claim, wherein the sleeve is detachable from the syringe body.

9. A syringe according to any preceding claim, wherein the sleeve is of a length slightly greater than the length of the syringe body.

10. A syringe according to any preceding claim, and including a plunger cover for engagement with the outer end of the plunger.

11. A non-medical syringe being mounted in a sleeve substantially as herein described with reference to the accompanying drawings.





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Application No: GB 9526102.0  
Claims searched: 1-12

Examiner: L.V.Thomas  
Date of search: 8 March 1996

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK CI (Ed.O): A5R (RCQA, RCQX, RGG, RGP)  
Int CI (Ed.6): A61M 5/178, 5/31, 5/315, 5/32  
Other: ONLINE:WPI

### Documents considered to be relevant:

| Category | Identity of document and relevant passage  | Relevant to claims |
|----------|--|--------------------|
| X        | GB 2283425A (Toi) see p.2 ll.14-29 and p.4 ll.19-31  | 1,2,5,6,8,9,11     |
| X        | GB 2208604A (Parapia et al) see p.5 l.23 - p.6 l.2 and p.6 ll.29-31                          | 1,10,11            |
| X        | EP 0071290A1 (Duphar Int.) see Fig.4 and p.8 l.35 - p.9 l.3                                  | 1,2,7,11           |
| X        | WO 90/07945A1 (CPP) see abstract, Figs.1 and 3 and p.4 ll.17-29                              | 1,8                |
| X        | US 5106378 (Smith) see Figs.2 and 3 and col.2 ll.40-57                                       | 1,2,5,6,9,11       |
| X        | US 5057088 (Narayanan et al) see Figs.2-6, col.2 ll.23-40, col.3 ll.32-48 and col.4 ll.18-27 | 1-4,7-9,11,12      |
| X        | US 4998924 (Ranford) see Figs.8,9 and 11 and col.6 ll.5-39                                   | 1,2,5-7,9,11       |
| X        | US 4997422 (Chow et al) see col.2 ll.26-40 and col.3 ll.40-50                                | 1,2,5,7-9,11       |

X Document indicating lack of novelty or inventive step  
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A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.



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Application No: GB 9526102.0  
Claims searched: 1-12

Examiner: L.V.Thomas  
Date of search: 8 March 1996

| Category | Identity of document and relevant passage |   | Relevant to claims |
|----------|---|---|--------------------|
| X        | US 4946447                                | (Hardcastle et al) see col.1 l.52 - col.2 l.10 and col.3 ll.35-58             | 1,2,5,7-9, 11      |
| X        | US 4681567                                | (Masters et al) see Figs. 1 and 6, col.2 ll.26-61 and col.3 l.44 - col.4 l.27 | 1,2,5,6,9, 11      |

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